

## COMPANY INFORMATION

Company	Meta Systems Laboratories, Inc.
Address	〒892-0833 STEP 601, 11-7 Matsubara-cho, Kagoshima 892-0833, Japan
Business	IT consulting; joint R&D and licensing in AI and blockchain
Established	June 23, 2021
CEO	Kentaro Oda, CEO (concurrently Faculty, Kagoshima University)
TEL	+81-99-800-2800

A university-launched startup founded to bring Kagoshima University's research into society.

### Selected Projects

- [Project]  
**Ocean Solution Technology Co., Ltd. — "Triton's Spear"**

Scope Since 2022: R&D for vessel-behavior inference AI, ocean-condition visualization, and fishing-ground forecasting
- [Project]  
**JAXA — 1st Space Strategy Fund Program**

Scope R&D for detection of ship-to-ship transfers and assessment of fishing activity
- [Project]  
**METI FY2024 Satellite Data Utilization & Solution Development Program**

Scope R&D for an AI-driven automated shellfish-toxin data-collection system
- [Project]  
**METI FY2024 Satellite Data Utilization & Solution Development Program**

Scope R&D to enhance an AI-based red-tide forecasting system

# See the Unseen Ocean.

Fusing satellite data, ocean big data,  
and AI to enable optimal decision-making  
for ocean business.

since  
2021.06

<https://www.metasyllab.co.jp/en>



# See the ocean with data. Decode it with AI.

Satellite data×Ocean big data×AI. From acquisition and analysis to social deployment.  
Meta Systems Laboratories delivers all three layers of ocean intelligence in-house.

## 01.COLLECT

DATA ACQUISITION

### Collect

A platform that collects and integrates diverse ocean big data  
– satellite, IoT, AIS, and more.



**Satellite Imagery**  
SAR / OPTICAL SATELLITE



**Ocean IoT Sensors**  
OCEAN BUOY / ON-BOARD



**AIS**  
AUTOMATIC IDENTIFICATION SYSTEM



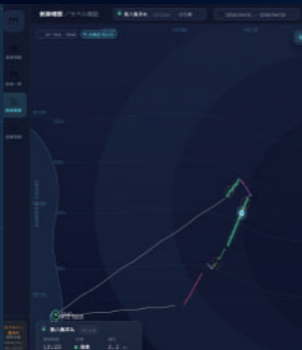
**Ocean Big Data**  
OCEAN MODELS

## 02.ANALYZE

OCEAN INTELLIGENCE

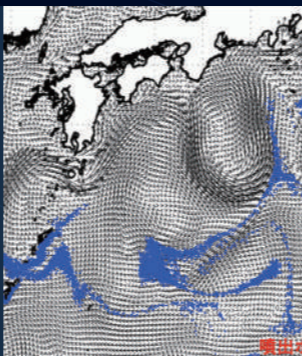
### Analyze

**A1 Vessel Behavior Inference AI**  
IUU DETECTION AI  
Infers vessel operating status from AIS-track data, supporting detection of illegal (IUU) fishing and fisheries-resource management.




IUU DETECT DARK VESSEL

**A3 Particle Simulation Applications**  
DRIFT & RECOVERY SIM  
Predicts drift of rocket-separation debris and identifies optimal recovery points – combining both to support safe splash-down planning.\*1



FWD / BACK TRACE-BACK

**A5 Proprietary 1/25 Lossless Compression**  
SATELLITE IMAGE COMPRESSION  
Proprietary compression that shrinks ocean big-data volume to about 1/25, enabling high-resolution data use even over slow, metered maritime links.



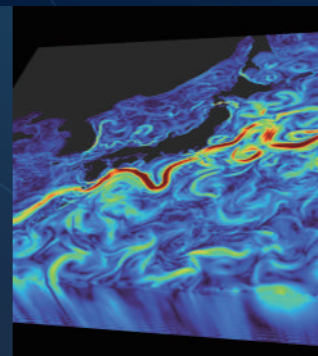
1/25 RATIO DATA SIZE ↓

**A2 Decision Support Forecast**  
DECISION INTELLIGENCE  
Integrates multivariate ocean data; our proprietary AI delivers departure decisions, fishing-ground forecasts, red-tide prediction (90% accuracy at 7 days), shellfish-toxin prediction, and commodity-output forecasts – accelerating management decisions.



N→1 FUSION SCORED OPTIONS

**A4 Current × Atmosphere Visualization Engine**  
3D OCEAN-SPACE VIEWER  
Proprietary 3D visualization spanning sea-surface, atmosphere, and space. Integrates ocean phenomena and space weather to support decisions from rocket launch to satellite operations and maritime activity.



2km ×3D ×10 vs WINDY

**A6 Data Trust Chain**  
DATA PROVENANCE TRACKING  
End-to-end tracking from data creation through third-party use, derivative-data registration, and end-of-life – making the source of any leak identifiable.



∞ IMMUTABLE CATCH → TABLE

## 03.APPLY

SOCIAL IMPACT

### Deliver

**B1 Space & Fisheries DX**  
From an ocean of intuition to one navigated by data.  
FOR Satellite operators / Fisheries / Government agencies / Local authorities

**B2 Maritime Crime Monitoring**  
An unblinking watch over territorial waters and EEZs.  
FOR Government agencies / Local authorities / Coast Guard

**B3 Executive Decision Support**  
Turning ocean big data into intelligence for management decisions.  
FOR Shipping, Fisheries & Energy / Investment & Insurance / Trading houses

**B4 Maritime Situational Awareness & Crime Prediction**  
Read what happens at sea before it happens.  
FOR Maritime intelligence / Coast Guard / Defence Agencies

DATA CREDITS  
\*1 A3 Particle Simulation: pumice-drift simulation of the 2021-08-14 Fukutoku-Okanoba submarine volcanic eruption. Data courtesy of Forecast Ocean Plus Co., Ltd.